CLAIMS

I claim the following:

1. A method of treating or preventing a cancer characterized by overexpression and/or upregulation of Porimin, comprising the step of administering a therapeutically or prophylactically effective amount of at least one Porimin binding partner, wherein said Porimin binding partner decreases or inhibits proliferation of said cancer.

2. The method of claim 1, wherein said at least one Porimin binding partner comprises a polypeptide.

3. The method of claim 2, wherein said Porimin binding partner comprises an immunoglobulin or a functional equivalent thereof.

4. The method of claim 3, wherein said immunoglobulin or functional equivalent thereof specifically binds an epitope of the extracellular domain of Porimin.

5. The method of claim 4, wherein said epitope is a carbohydrate epitope.

6. The method of claim 4, wherein said extracellular domain comprises all or a portion of the amino acid sequence set forth in SEQ ID NO: 5.

7. The method of claim 4, wherein said extracellular domain comprises all or a portion of the amino acid sequence set forth in SEQ ID NO: 6.

8. The method of claim 3, wherein said immunoglobulin or functional equivalent thereof is human, chimeric, humanized, murine, CDR-grafted, phage-displayed, bacteria-displayed, yeast-displayed, transgenic-mouse produced, mutagenized, or randomized.

9. The method of claim 1, wherein said at least one Porimin binding partner comprises a polynucleotide Porimin binding partner.

10. The method of claim 9, wherein said at least one Porimin binding partner comprises an antisense oligonucleotide.

11. The method of claim 1, wherein said at least one Porimin binding partner comprises a small molecule.

12. The method of claim 1, wherein said cancer is colon cancer, prostate cancer, breast cancer or leukemia.

13. The method of claim 12, wherein said cancer is colon cancer.

14. The method of claim 12, wherein said cancer is prostate cancer.

15. The method of claim 12, wherein said cancer is breast cancer.

16. The method of claim 12, wherein said cancer is leukemia.

17. The method of claim 1, wherein said therapeutically or prophylactically effective amount of at least one Porimin binding partner is co-administered with another therapeutic agent.

18. The method of claim 1, wherein said therapeutically or prophylactically effective amount of at least one Porimin binding partner is consecutively administered, in either order, with another therapeutic agent.

19. A Porimin binding partner suitable for treating a cancer characterized by overexpression and/or upregulation of Porimin, wherein said Porimin binding partner decreases or inhibits proliferation of said cancer.

20. The Porimin binding partner of claim 19, wherein said Porimin binding partner comprises a polypeptide.

21. The Porimin binding partner of claim 20, wherein said polypeptide comprises an immunoglobulin or a functional equivalent thereof.

22. The Porimin binding partner of claim 21, wherein said immunoglobulin or functional equivalent thereof is human, chimeric, humanized, murine, CDR-grafted, phage-displayed, bacteria-displayed, yeast-displayed, transgenic-mouse produced, mutagenized or randomized.

23. The Porimin binding partner of claim 21, wherein said immunoglobulin or functional equivalent thereof specifically binds an epitope of the extracellular domain of Porimin.

24. The Porimin binding partner of claim 23, wherein said epitope is a carbohydrate epitope.

25. The Porimin binding partner of claim 23, wherein said extracellular domain comprises all or a portion of the amino acid sequence set forth in SEQ ID NO: 5.

26. The Porimin binding partner of claim 23, wherein said extracellular domain comprises all or a portion of the amino acid sequence set forth in SEQ ID NO: 6.

27. The Porimin binding partner of claim 19, wherein said Porimin binding partner comprises a polynucleotide.

28. The Porimin binding partner of claim 27, wherein said polynucleotide Porimin binding partner comprises an antisense oligonucleotide Porimin binding partner.

29. The Porimin binding partner of claim 19, wherein said Porimin binding partner comprises a small molecule Porimin binding partner.

30. A pharmaceutical composition useful for treating a cancer characterized by overexpression and/or upregulation of Porimin, comprising a pharmaceutically effective amount of at least one Porimin binding partner and a pharmaceutically acceptable carrier, wherein said at least one Porimin binding partner decreases or inhibits proliferation of said cancer.

31. The pharmaceutical composition of claim 30, wherein said at least one Porimin binding partner comprises a polypeptide.

32. The pharmaceutical composition of claim 31, wherein said polypeptide comprises an immunoglobulin or a functional equivalent thereof.

33. The pharmaceutical composition of claim 32, wherein said immunoglobulin or functional equivalent thereof is human, chimeric, humanized, murine, CDR-grafted, phage-displayed, bacteria-displayed, yeast-displayed, transgenic-mouse produced, mutagenized or randomized.

34. The pharmaceutical composition of claim 32, wherein said immunoglobulin or functional equivalent thereof specifically binds an epitope of the extracellular domain of Porimin.

35. The pharmaceutical composition of claim 34, wherein said epitope is a carbohydrate epitope.

36. The pharmaceutical composition of claim 34, wherein said extracellular domain comprises all or a portion of the amino acid sequence set forth in SEQ ID NO: 5.

37. The pharmaceutical composition of claim 34, wherein said extracellular domain comprises all or a portion of the amino acid sequence set forth in SEQ ID NO: 6.

38. The pharmaceutical composition of claim 30, wherein said Porimin binding partner comprises a polynucleotide.

39. The pharmaceutical composition of claim 38, wherein said polynucleotide Porimin binding partner comprises an antisense oligonucleotide Porimin binding partner.

40. The pharmaceutical composition of claim 30, wherein said Porimin binding partner comprises a small molecule Porimin binding partner.

41. A method of determining the presence or absence of a cancer characterized by overexpression and/or upregulation of Porimin, comprising the steps of:

(a) determining the level of expression of Porimin in a biological sample obtained from a patient;

(b) comparing said level of Porimin expression in said patient biological sample to the level of Porimin expression in a normal biological sample; and

(c) correlating said level of Porimin expression in said patient biological sample relative to said normal biological sample to a positive or negative diagnosis of said cancer.

42. A method of determining a patient's predisposition to a cancer characterized by overexpression and/or upregulation of Porimin comprising the steps of:

(a) determining the level of expression of Porimin in a biological sample obtained from a patient;

(b) comparing said level of Porimin expression in said patient biological sample to the level of Porimin expression in a normal biological sample; and

(c) correlating said level of Porimin expression in said patient biological sample relative to said normal biological sample to a diagnosis of a predisposition to said cancer.

43. A microarray comprising one or more polynucleotide sequences substantially homologous to or complementary to (a) the polynucleotide sequences of SEQ ID NO: 1 or SEQ ID NO: 2 or (b) at least a 20-nucleotide portion of the polynucleotide sequences of SEQ ID NO: 1 or SEQ ID NO: 2.

44. A method of determining the presence or absence of a cancer characterized by overexpression and/or upregulation of Porimin comprising the steps of:

(a) determining the level of expression of Porimin in a biological sample obtained from a patient, using the microarray of claim 43;

(b) comparing said level of Porimin expression in said patient biological sample to the level of Porimin expression in a normal biological sample; and

(c) correlating said level of Porimin expression in said patient biological sample relative to said normal biological sample to a positive or negative diagnosis of said cancer.

45. A method of determining a patient's predisposition to a cancer characterized by overexpression and/or upregulation of Porimin comprising the steps of:

(a) determining the level of expression of Porimin in a biological sample obtained from a patient, using the microarray of claim 43;

(b) comparing said level of Porimin expression in said patient biological sample to the level of Porimin expression in a normal biological sample; and

(c) correlating said level of Porimin expression in said patient biological sample relative to said normal biological sample to a diagnosis of a predisposition to said cancer.

46. A microarray comprising one or more protein-capture agents that bind one or more amino acid sequences encoded by all or a portion of one or more amino acid

sequences selected from the group consisting of SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; and SEQ ID NO: 6.

47. A method of determining the presence or absence of a cancer characterized by overexpression and/or upregulation of Porimin, comprising the steps of:

(a) determining the level of expression of Porimin in a biological sample obtained from a patient, using the microarray of claim 46;

(b) comparing said level of Porimin expression in said patient biological sample to the level of Porimin expression in a normal biological sample; and

(c) correlating said level of Porimin expression in said patient biological sample relative to said normal biological sample to a positive or negative diagnosis of said cancer.

48. A method of determining a patient's predisposition to a cancer characterized by overexpression and/or upregulation of Porimin, comprising the steps of:

(a) determining the level of expression of Porimin in a biological sample obtained from a patient, using the microarray of claim 46;

(b) comparing said level of Porimin expression in said patient biological sample to the level of Porimin expression in a normal biological sample; and

(c) correlating said level of Porimin expression in said patient biological sample relative to said normal biological sample to a diagnosis of a predisposition to said cancer.

49. A method of screening for a Porimin binding partner suitable for treating or preventing a cancer characterized by overexpression and/or upregulation of Porimin, comprising the steps of:

(a) culturing a cell line transfected with an expression vector comprising a gene encoding Porimin to express said gene a medium containing at least one candidate binding partner of Porimin; and

(b) measuring the binding of said at least one candidate binding partner to the Porimin produced by said cell line.

50. The method of claim 49, wherein said cell line is derived from a mammal.

51. The method of claim 49, wherein said Porimin is encoded by a polynucleotide sequence substantially homologous to a polynucleotide sequence or complementary sequence thereof, or portions of said polynucleotide sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1 or SEQ ID NO: 2.

52. The method of claim 49, wherein said at least one candidate binding partner is labeled.

53. The method of claim 52, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

54. A method of screening for a Porimin binding partner suitable for treating or preventing a cancer characterized by overexpression and/or upregulation of Porimin, comprising the steps of:

(a) incubating membranes isolated from a cultured cell line transfected with an expression vector comprising a gene encoding Porimin, wherein said membranes contain the expressed Porimin, in the presence of at least one candidate binding partner to Porimin; and

(b) measuring the binding of said at least one candidate binding partner to said Porimin contained within said membranes.

55. The method of claim 54, wherein said Porimin is encoded by a polynucleotide sequence substantially homologous to a polynucleotide sequence or complementary sequence thereof, or portions of said polynucleotide sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1 or SEQ ID NO: 2.

56. The method of claim 54, wherein said at least one candidate binding partner is labeled.

57. The method of claim 56, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

58. A method of screening for a Porimin binding partner suitable for treating or preventing a cancer characterized by overexpression and/or upregulation of Porimin, comprising the steps of:

(a) contacting at least one candidate binding partner with the extracellular domain of Porimin under conditions wherein said at least one candidate binding partner can bind the extracellular domain of said Porimin; and

(b) detecting the binding of said at least one candidate binding partner to the extracellular domain of said Porimin.

59. The method of claim 58, wherein said Porimin is encoded by a polynucleotide sequence substantially homologous to a polynucleotide sequence or complementary sequence thereof, or portions of said polynucleotide sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1 or SEQ ID NO: 2.

60. The method of claim 58, wherein said at least one candidate binding partner is labeled.

61. The method of claim 60, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

62. The method of claim 58, wherein said extracellular domain of said Porimin is located on the surface of a cell expressing said Porimin.

63. The method of claim 58, wherein said extracellular domain is located on a membrane isolated from a cell expressing said Porimin.

64. A method of screening a candidate binding partner of Porimin, comprising the steps of:

(a) contacting said candidate binding partner with a cancer cell characterized by overexpression and/or upregulation of Porimin under conditions wherein said candidate binding partner can bind the extracellular domain of Porimin; and

(b) detecting a decrease or inhibition of proliferation of said cancer cell relative to the proliferation of a cancer cell of the same type that is not contacted with said candidate binding partner.

65. The method of claim 64, wherein said candidate binding partner is labeled.

66. The method of claim 65, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

67. A method of determining the ability of a drug to inhibit ligand binding to Porimin, comprising the steps of:

(a) culturing a cell line transfected with an expression vector comprising a gene encoding Porimin to express said gene in the presence of a ligand and in the presence of both said ligand and a drug; and

(b) comparing the level of binding of said ligand to the expressed Porimin to the level of binding of said ligand to the expressed Porimin in the presence of said drug, wherein a lower level of ligand binding in the presence of said drug indicates that said drug is an inhibitor of ligand binding.

68. The method of claim 67, wherein said Porimin is encoded by a polynucleotide sequence substantially homologous to a polynucleotide sequence or complementary sequence thereof, or portions of said polynucleotide sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1 or SEQ ID NO: 2.

69. The method of claim 67, wherein said cell line is mammalian.

70. The method of claim 67, wherein said ligand is labeled.

71. The method of claim 67, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

72. The method of claim 67, wherein said drug is labeled.

73. The method of claim 72, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

74. A method of determining the ability of a drug to inhibit ligand binding to Porimin comprising the steps of:

(a) incubating membranes isolated from a cultured cell line transfected with an expression vector comprising a gene encoding Porimin, wherein said membranes contain the expressed Porimin, in the presence of a ligand and in the presence of both said ligand and a drug; and

(b) comparing the level of binding of said ligand to said expressed Porimin to the level of binding of said ligand to said expressed Porimin in the presence of said drug, wherein a lower level of ligand binding in the presence of said drug indicates that said drug is an inhibitor of ligand binding.

75. The method of claim 74, wherein said cell line is derived from a mammal.

76. The method of claim 74, wherein said Porimin is encoded by a polynucleotide sequence substantially homologous to a polynucleotide sequence or complementary sequence thereof, or portions of said polynucleotide sequence or complementary sequence thereof, selected from the group consisting of SEQ ID NO: 1 or SEQ ID NO: 2.

77. The method of claim 74, wherein said ligand is labeled.

78. The method of claim 77, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.

79. The method of claim 74, wherein said drug is labeled.

80. The method of claim 79, wherein said label is selected from the group consisting of a radiolabel, an enzyme, a chromophore, and a fluorophore.